



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

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NOTICE OF ALLOWANCE AND ISSUE FEE DUE

22M2/0331

STEPHEN S. GRACE, THE DOW CHEMICAL CO.
P.O. BOX 1967
MIDLAND MI 48641-1967

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/532,729	09/26/95	021	CHI, A 2204	03/31/97
First Named Applicant	DUNMEAD, STEPHEN D.			

TITLE OF INVENTION ALUMINUM NITRIDE, ALUMINUM NITRIDE CONTAINING SOLID SOLUTIONS AND ALUMINUM NITRIDE COMPOSITES PREPARED BY COMBUSTION SYNTHESIS

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
1 40.076A	419-002.000	L24	UTILITY	NO	\$1290.00	06/30/97

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "6b" of Part B should be completed.

III. All communications regarding this application must give application number and batch number.
Please direct all communication prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

3. PATENT AND TRADEMARK OFFICE COPY

Notice of Allowability

Application No.
08/532,729

Applicant(s)

Dunmead et al.

Examiner

Anthony R. Chi

Group Art Unit
2204



All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☒ This communication is responsive to 11-4-96

☒ The allowed claim(s) is/are 1-19, 21, 23

☐ The drawings filed on _____ are acceptable.

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☐ Applicant MUST submit NEW FORMAL DRAWINGS

☐ because the originally filed drawings were declared by applicant to be informal.

☐ including changes required by the Notice of Draftsperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. _____

☐ including changes required by the proposed drawing correction filed on _____, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☐ Interview Summary, PTO-413

☐ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☐ Examiner's Statement of Reasons for Allowance

Charles T. Jordan
CHARLES T. JORDAN
SUPERVISORY PATENT EXAMINER
GROUP 2200

Art Unit: 2204

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Gary C. Cohn on 3-25-97.

2. The application has been amended as follows:

IN THE CLAIMS

Claim 1, line 7: delete “, optionally in admixture with an inert solid diluent”

3. The following is an examiner's statement of reasons for allowance:

The closest references are Holt et al. (USPN 4,988,645) and Holt et al. (USPN 4,877,759) which teach making an AlN body via combustion synthesis by igniting Al powder in a nitrogen atmosphere. However the prior art does not teach the use of gaseous nitrogen at such low pressures as 0.75-30 atmospheres while still converting 75% of the aluminum into aluminum nitride. Holt et al. (USPN 4,877,759) does teach that the minimum nitrogen pressure below which ignition and subsequent combustion will not take place is determined by the type of

Art Unit: 2204

aluminum used, its particle size, and type of diluents used.¹ The minimum pressure Holt et al. teaches is 100 atmospheres² and there is no teaching or fair suggestion by the prior art showing how to reduce this minimum by modifying type of aluminum used, its particle size, type of diluents used, or by any other method in order to convert 75% of the aluminum into aluminum nitride as recited in applicant's claims. The prior art also does not teach or suggest infiltration with a polymer as recited in applicant's claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to whose telephone number is (703) 305-1840.



CHARLES T. JORDAN
SUPERVISORY PATENT EXAMINER
GROUP 2200

¹See column 3, lines 44-50.

²Column 4, lines 24-25.

PART B—ISSUE FEE TRANSMITTAL

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 2 through 6 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to addressee entered in Block 1 unless you direct otherwise, by: (a) specifying a new correspondence address in Block 3 below; or (b) providing the PTO with a separate "FEE ADDRESS" for maintenance fee notifications with the payment of Issue Fee or thereafter. See reverse for Certificate of Mailing, below.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231.

DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

1. CORRESPONDENCE ADDRESS		2. INVENTOR(S) ADDRESS CHANGE (Complete only if there is a change)	
STEPHEN S. GRACE, THE DOW CHEMICAL CO. P.O. BOX 1967 MIDLAND MI 48641-1967		INVENTOR'S NAME	
		Street Address	
		City, State and ZIP Code	
		CO-INVENTOR'S NAME	
		Street Address	
		City, State and ZIP Code	
		<input type="checkbox"/> Check if additional changes are enclosed	

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
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First Named Applicant: DUNMEAD, STEPHEN D.				

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1 40.076A	419-002.000	L24	UTILITY	NO	\$1290.00	06/30/97

3. Correspondence address change (Complete only if there is a change)

Stephen S. Grace
The Dow Chemical Company
P.O. Box 1967
Midland, Michigan 48641-1967

4. For printing on the patent front page, list the names of not more than 3 registered patent attorneys or agents OR, alternatively, the name of a firm having as a member a registered attorney or agent. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

5. ASSIGNMENT DATA TO BE PRINTED ON THE PATENT (print or type)

(1) NAME OF ASSIGNEE:
The Dow Chemical Company

(2) ADDRESS: (CITY & STATE OR COUNTRY)
Midland, MI USA

6a. The following fees are enclosed:

☐ Issue Fee ☐ Advance Order - # of Copies _____

6b. The following fees should be charged to:

DEPOSIT ACCOUNT NUMBER 04-1512

(ENCLOSE A COPY OF THIS FORM)

☒ Issue Fee ☐ Advance Order - # of Copies _____

☒ Any Deficiencies in Enclosed Fees

The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above.

(Authorized Signature) _____ 30,456 (Date) 4/9/97

NOTE: The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

Certificate of Mailing

Note: If this certificate of mailing is used, it can only be used to transmit the Issue Fee. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Box ISSUE FEE
Assistant Commissioner for Patents
Washington, D.C. 20231

00185 142 1,290.00CH

on: April 9, 1997 (Date)
Carrie Gray (Name of person making deposit)
Carrie Gray (Signature)
April 9, 1997 (Date)

1. TRANSMIT THIS FORM WITH FEE